

REMARKS

Applicant has amended the above-identified application responsive to the Office Action dated July 11, 2003.

In brief, Applicant has amended claims 1, 2, 6, 7, 8, 14, 19, 23, 25, 26, 27, 29, 30, 31, 32, 34 and 39. Claims 5, 12, 18 and 24 have been cancelled, and new independent claims 40-44 have been added. In sum, claims 1-4, 6-11, 13-17, 19-23 and 25-44 remain pending in the application.

Applicant has carefully amended Fig. 7 of the drawings, as per the enclosed copy, and has further amended the claims to overcome the informality objections indicated on pages 2 and 3, paragraph 3. Independent claim 1 has further been amended to incorporate the limitations of dependent claim 5, indicated as being allowable by the Examiner. Dependent claims 9, 10, 11, 16, 17 and 23 remain pending from allowable claim 1. Claims 25-38 were previously indicated as being allowable by the Examiner and are submitted to now be in proper form for allowance by incorporating the requested amendments on pages 2 and 3 of the Examiner's remarks.

Claims 29 and 39 have also been amended and are submitted to patentably distinguish from the Ribarich 5,451,845 and Yagi 5,140,229 references. In relevant part, amended claim 29 now recites the feature of the inverter for producing an alternating current for a load. Additionally, the protection circuit now includes a lamp current sensing circuit for sensing a voltage in the load, as well as a response circuit coupled to the current sensing circuit to prevent the inverter from oscillating and thus reduce the power to the output circuit when the sensed load current reaches a given level.

Ribarich discloses a shutdown mechanism for a ballast, in relevant part having a series interrupter circuit S1, and which is disadvantageous since to interrupt the entire power

supply current to the ballast runs the risk of causing switching transients that could be harmful to the switching elements located inside. Further, the shunt in Ribarich is applied across the entire power supply voltage to the load, running the risk of circuit damage in shunting a higher voltage. The inverter arrangement in claim 29, as amended, and which assists in circuit shutdown, utilizes fewer components and is argued to be a nonobvious improvement over Ribarich.

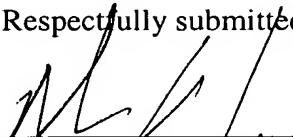
Yagi illustrates a circuit for cutting off power/voltage to the DC voltage booster circuit and/or the high frequency booster circuit. All of the Yagi drawings show the high frequency booster circuit essentially as a black box in which power goes in on one side and emerges out of the other.

In contrast, the present invention recites the control element going directly into the booster circuit, not illustrated in Yagi. Furthermore, the FET in Yagi does not serve the same function as the FET in claim 29, in that the present FET control element is within the high frequency booster circuit itself. Also, an advantage of the voltage sensing circuit in the invention is to protect against supply overvoltage, not undervoltage as in Yagi. If the Yagi protection circuit were used to protect against overvoltage, there would be more risk of damage to the shunt transistor 26 in Yagi, Fig. 2, or the series relay, Fig. 3, due to more current when there is more voltage. Accordingly, it is submitted that claims 29 and 39 are allowable.

Finally, new independent claims 40-44 have been added and represent the allowable subject matter of claims 1, 10 and 12 (claim 40), claims 1 and 13 (claim 41), claims 1 and 15 (claim 42), claims 1 and 18 (claim 43) and claims 1 and 24 (claim 44). Dependent claim 14 remains dependent from new claim 41, and dependent claims 19-22 dependent from new claim 43.

It is therefore submitted that the claims are now in allowable form. A new power of attorney authorizing the attorney of record has been filed and a copy attached to this response. Attorney for Applicant may be contacted at 248-647-6000 with any questions the Examiner may have.

Respectfully submitted,


Douglas J. McEvoy, Registration No. 34,385
Gifford, Krass, Grot, Sprinkle,
Anderson & Citkowski, P.C.
280 N. Old Woodward, Suite 400
Birmingham, MI 48009
(248) 647-6000

Enclosures

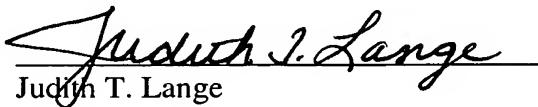
GS-W:\Word Processing\djm\QTI10702-amd.doc

CERTIFICATE OF MAILING BY "EXPRESS MAIL"

"EXPRESS MAIL" MAILING LABEL NUMBER EL 98316979745

DATE OF DEPOSIT December 8, 2003

I hereby certify that this paper or fee (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service "Express Mail Post Office To Addressee" Service under 37 CFR 1.10 on the date indicated above and is addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



Judith T. Lange